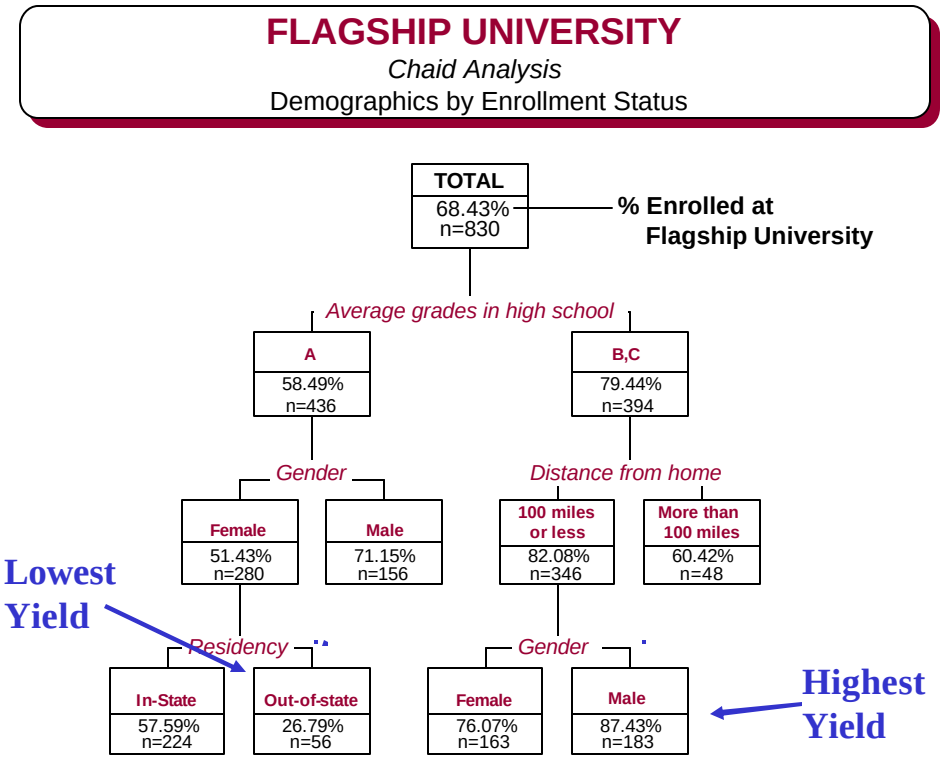
CHAID

Among the primary goals of many research projects is learning what characteristics, preferences, and opinions differentiate one target audience from another. Chi-square Automatic Interaction Detector (CHAID) is an analytic tool that is employed in such market segmentation analyses and is useful in answering questions such as:

- What characteristics most strongly define your institution's primary market of applicants?
- Which prospective students are least likely to submit an application to your institution?
- What attributes most strongly define the students enrolled at your institution?
- Which students are at the highest risk for dropping out?
- Which alumni are most or least likely to support your institution financially?

CHAID is a segmentation tool that detects and displays interactions among variables in a clear and easy-to-interpret fashion, presenting the results in a tree-like format. At each "branch," CHAID identifies two or more natural segmentations in the entire sample that are most (and least) strongly identified with outcomes, such as likelihood of applying. Following the "branches" back to the top of the tree from any given box identifies the combination of characteristics that best defines a target audience.



Notes: Demographics tested include average grades in high school, ethnic background, distance from home, in-state residency, type of high school, parents' income, and gender. Percent in each cell is the percent of the cell's students (n-size) who enrolled at Flagship University.

Applying CHAID

In the above example, CHAID was used to identify the best combination of demographic variables to differentiate enrolling from non-enrolling students at Flagship University. Average high school grades emerge as the most important predictor of enrollment, with students who report an "A" average in high school being more difficult to enroll. Distance from home to Flagship University also plays a role in the enrollment decision, particularly among those 394 participants who report "B" or "C" grades in high school. Within this group, students who live closer to the University are disproportionately more likely to enroll. And finally, the greatest yield of enrolling students (87%) is found among males who report a "B" or "C" average in high school and live 100 miles or less from Flagship's campus, while the lowest proportion of enrollees (27%) is found among females who have an "A" average in high school and reside out-of-state.

This CHAID analysis helped Flagship University better understand enrollment behavior among its admitted student body. First, the University learned that enrollment is strongly tied to students' gender, average high school grades, distance of the campus from home, and state of residency. Second, the analysis revealed that several other student characteristics (ethnic background, high school type, and parental income) are less strongly tied to matriculation decisions.